

**Author or Argumentation:
Exploring the Effect of Prior Beliefs
And Personality Traits
On Persuasiveness**

Nikolay Kolyada

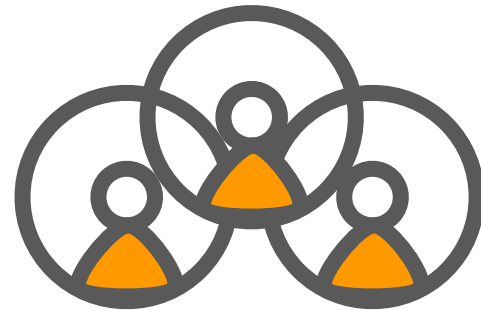
Outline

- Background / Motivation
- Research Questions
- Dataset
- Modelling Authors
 - Modelling Interests
 - Modelling Beliefs
 - Modelling Personality traits
- Evaluation
- Conclusion

Persuasion



Advertising, Marketing



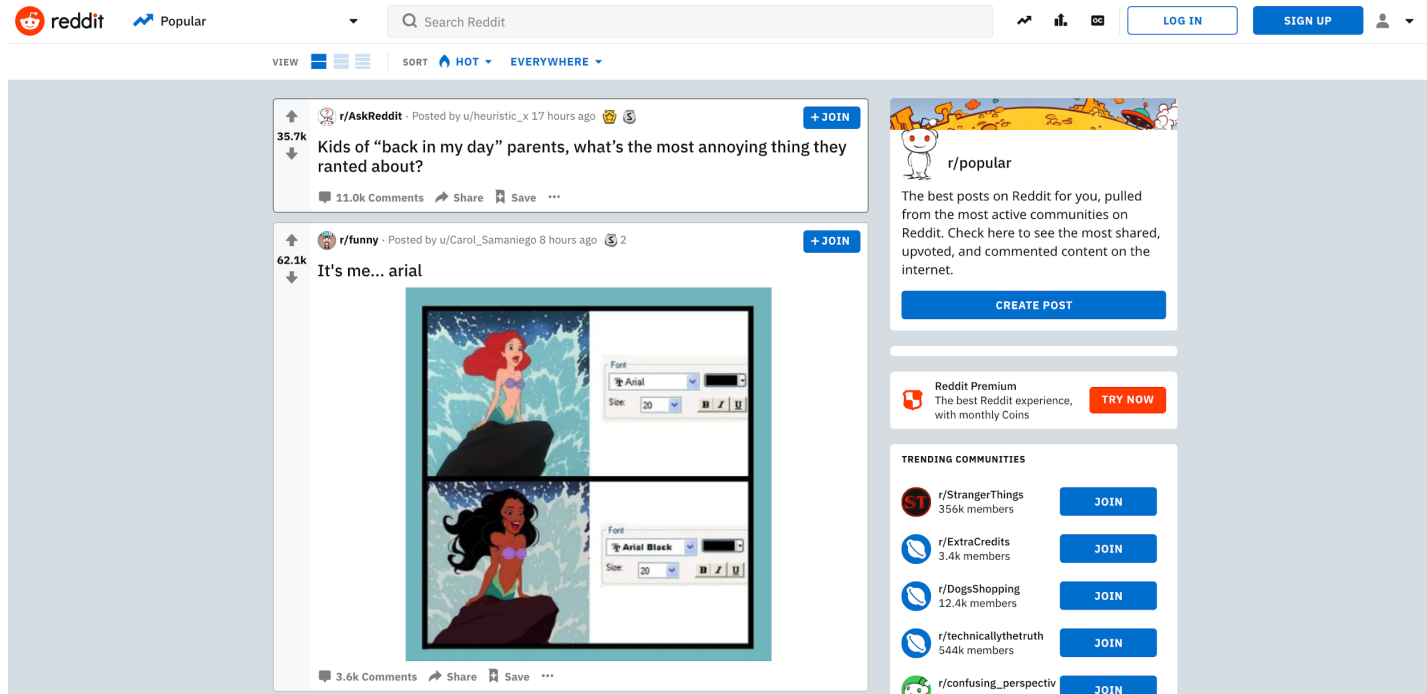
Online forums



Research Questions

- How to represent person's interests, beliefs, and personality traits?
- How to model the author similarity?
- How to demonstrate the impact of the similarity of people's interests, beliefs, and personality traits on their persuasiveness, if any?

Reddit





USERS
43m

COMMENTS

3.7b

ChangeMyView

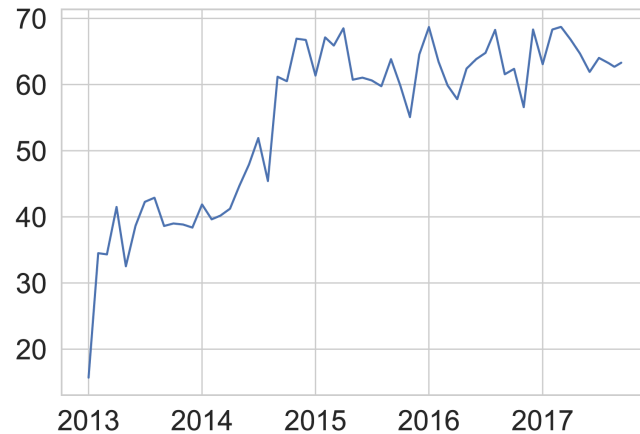
ChangeMyView

SUBMISSIONS



USERS
174k

AVERAGE
COMMENTS
PER
SUBMISSION



DISCUSSIONS
60k

Submission



Original Post

Title: Cars should be equipped with both angry and apologetic horns



Reply #1

...

A standard and widely used method of conveying thanks and apology already exists: blinking your hazards a few times.

...



Ah, really? Didn't know that!



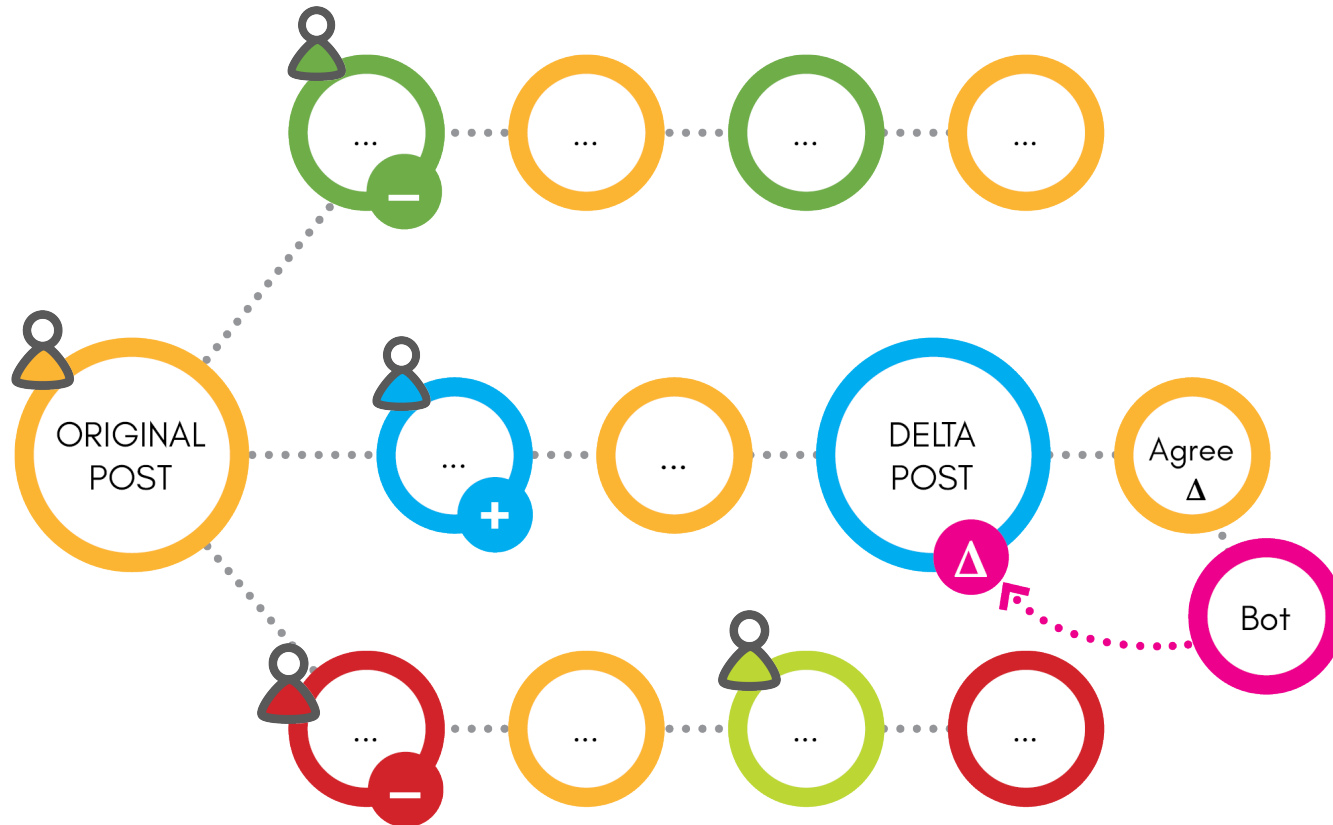
Reply #2

...

You jump a big step here, because you don't explain why the traditional light wave/hand under mirror gesture isn't effective. I see it pretty much every time

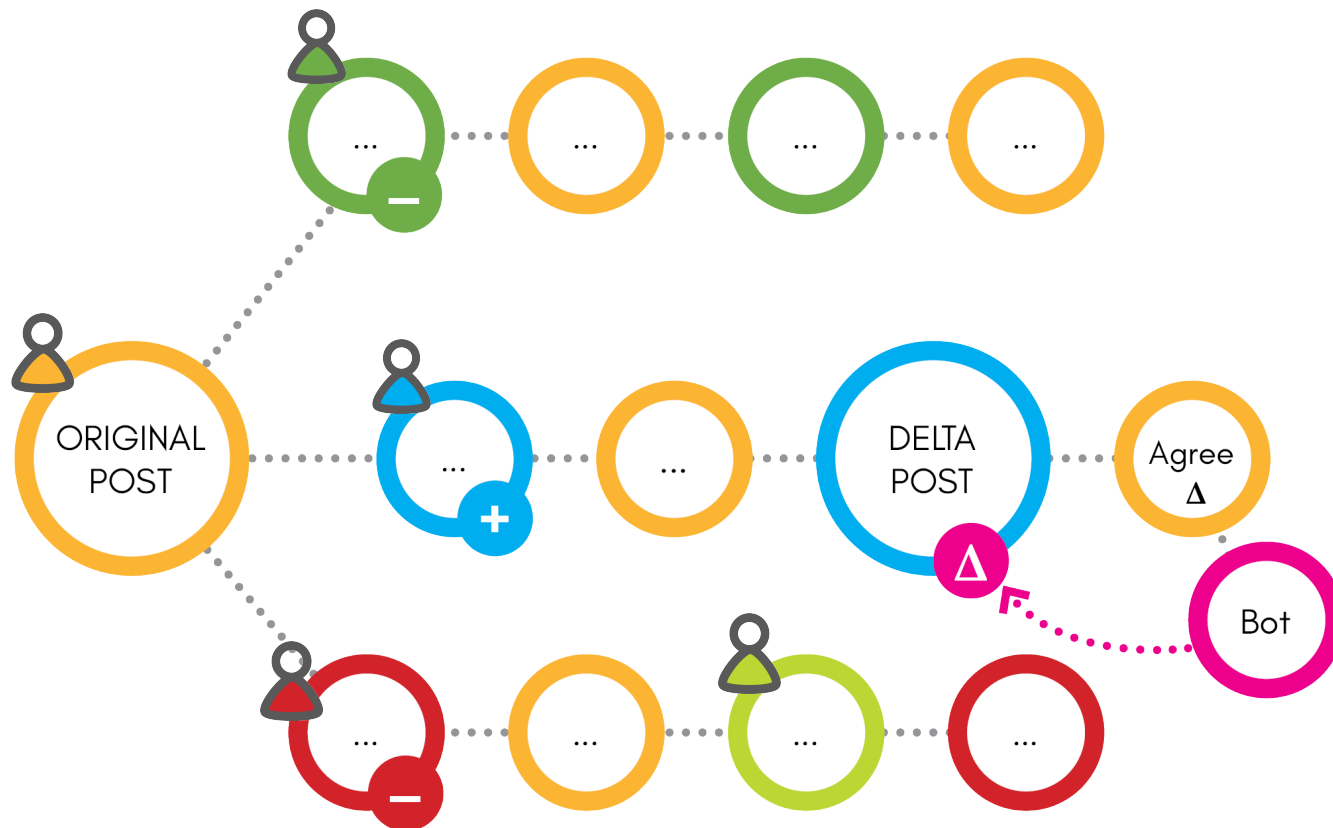
...

Submission

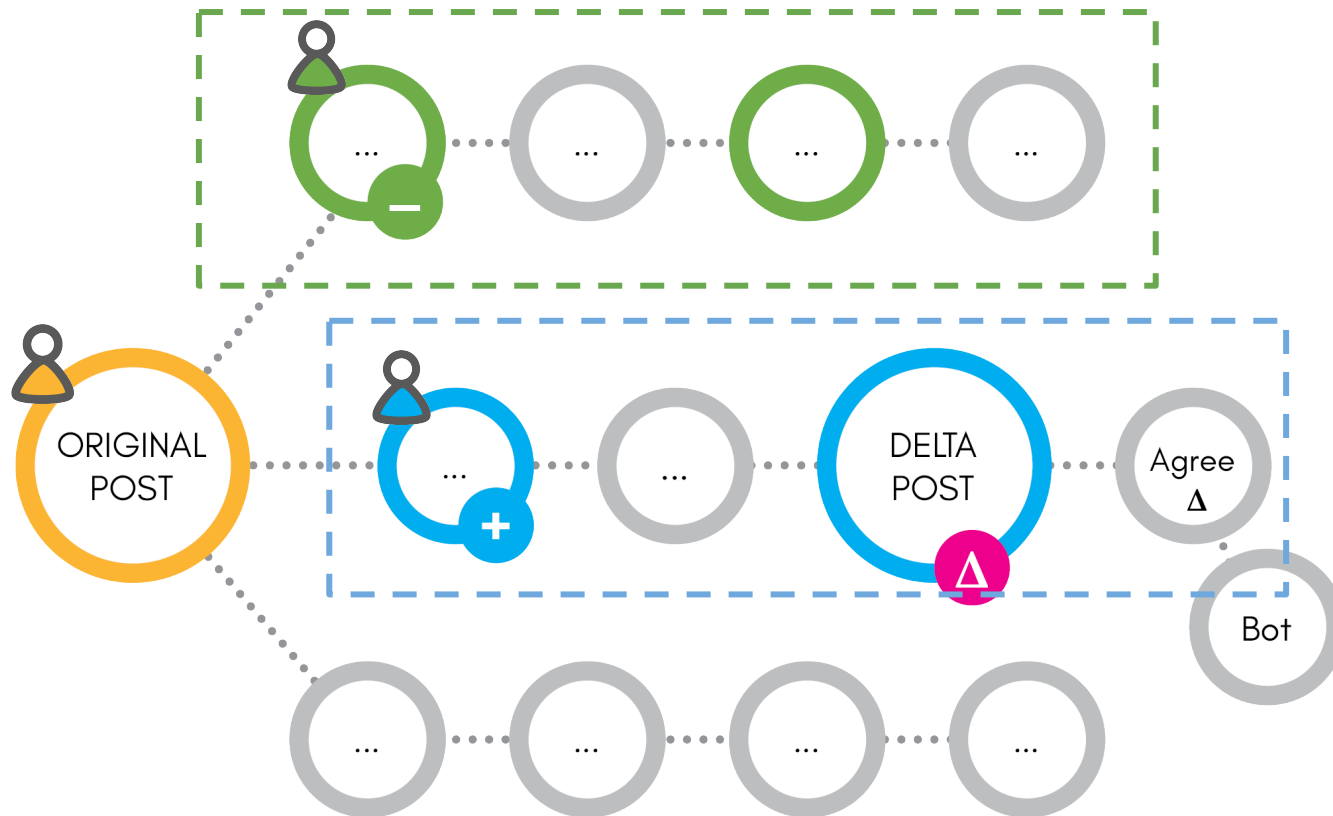


Pairs Dataset

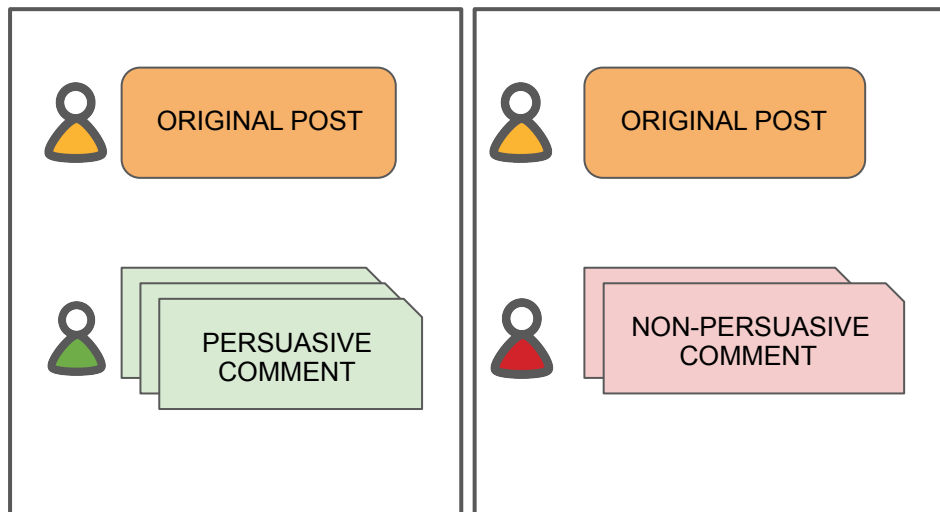
Pairs dataset



Pairs dataset

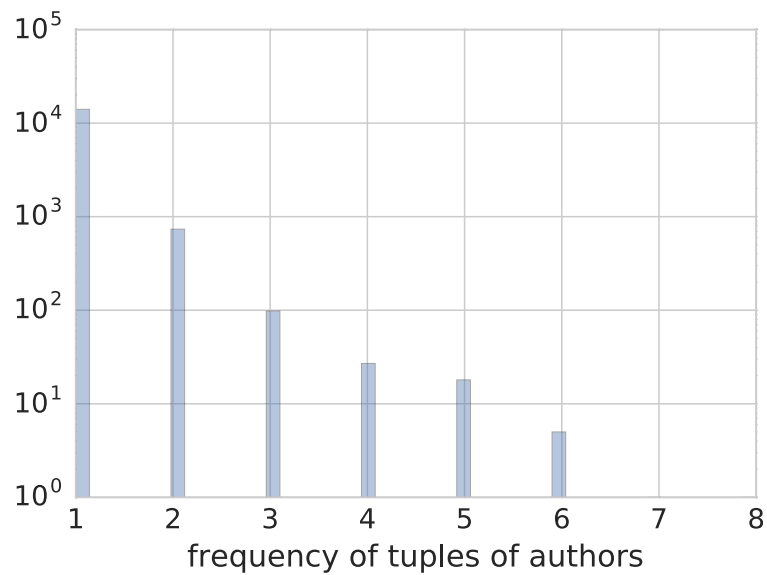


Pairs dataset



OP	<ul style="list-style-type: none"> - subreddit_id - author - created - title - text
REPLY	<ul style="list-style-type: none"> - author - created - text - delta
DELTA	True / False

Pairs dataset

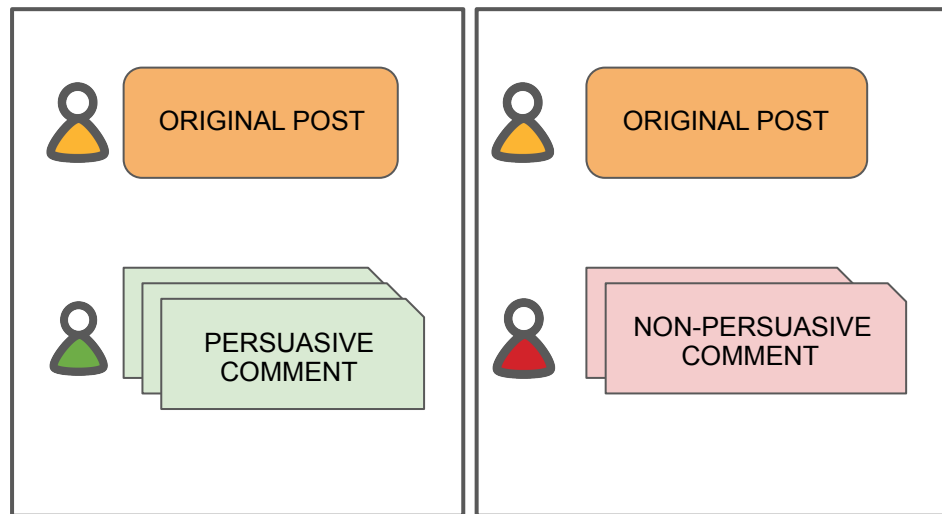


TIMESPAN
01.2013 -
09.2017

8025
PERSUASIVE PAIRS

8025
NON-PERSUASIVE
PAIRS

Argumentation features

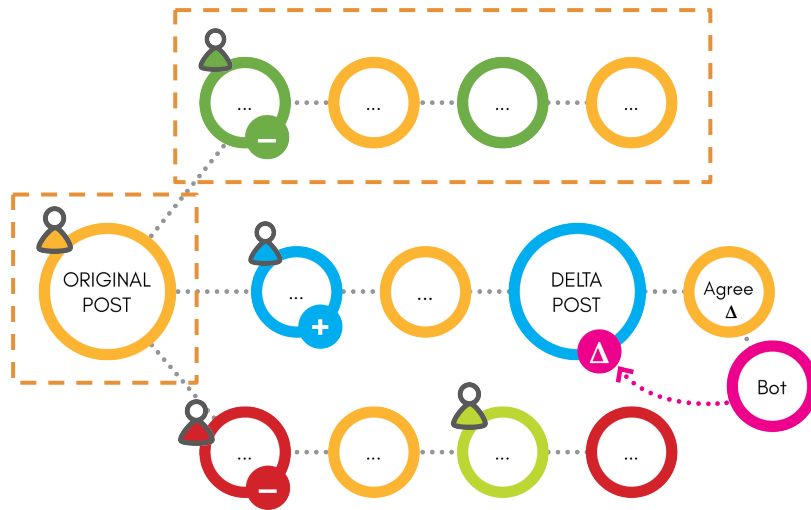


- Linguistic features

BOW, articles, pronouns, links,
positive/negative words, question
marks, quotations

- Interplay features

Argumentation features



- Linguistic features
- Interplay features

Modelling Author Interests

Modelling Interests



Modelling Interests



Modelling Interests



r/AskReddit
 r/politics
 r/whatisthisthing
 r/personalfinance
 r/technology
 r/news
 r/StrangerThings
 r/changemyview
 r/todayilearned
 r/space
 r/science
 r/soccer



Discussion
 Hobbies
 News and Politics
 Entertainment
 Science

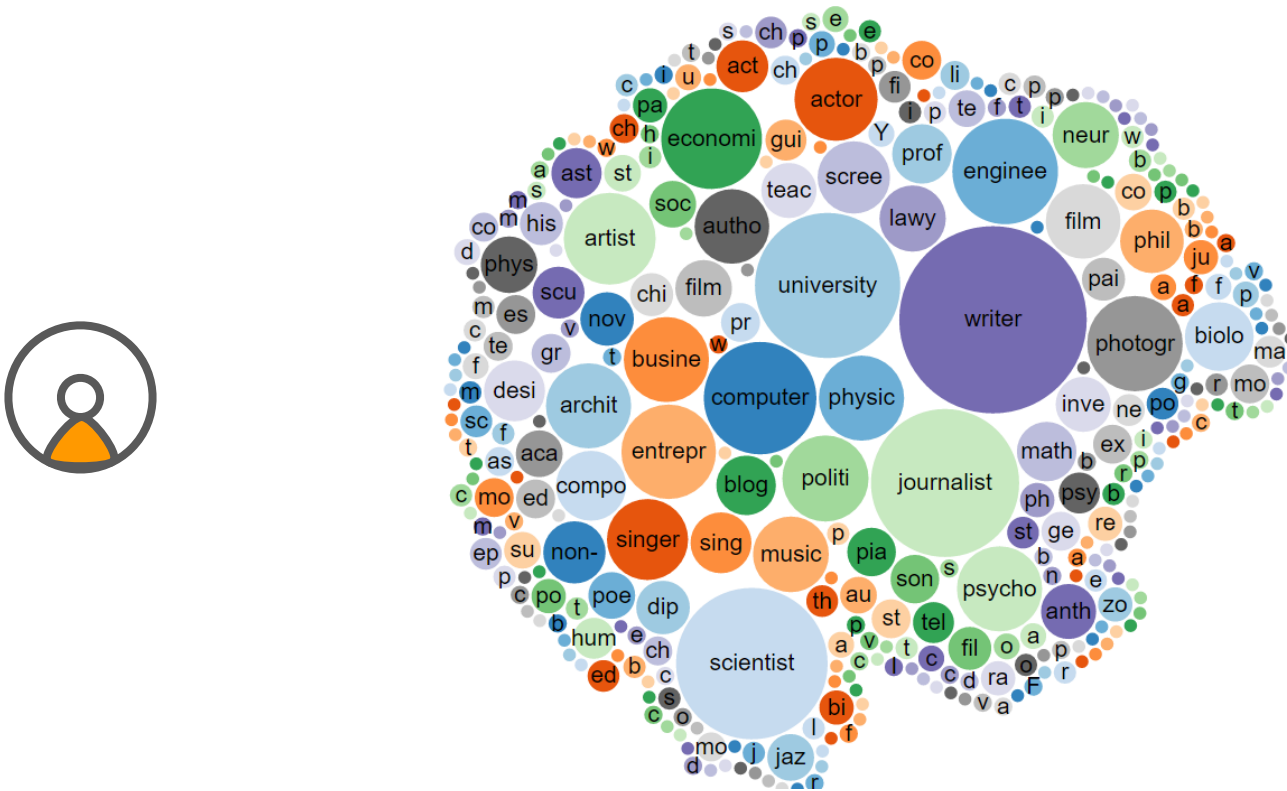


12	r/AskReddit
91	r/space
...	r/todayilearned
32	r/politics
0	r/personalfinance

POST FREQUENCIES
 TF-IDF
 PCA

Modelling Author Beliefs

Modelling Author Beliefs



Context Sentiment

category	tagret	post text	context sentiment
News And Politics → Republican	Hillary Clinton	... Besides, Hillary Clinton also has some weaknesses. ...	-0.362

Modelling Author Beliefs



Modelling Author Beliefs



Modelling Author Beliefs



r/AskReddit
 r/politics
 r/whatisthisthing
 r/personalfinance
 r/technology
 r/news
 r/StrangerThings
 r/changemyview
 r/todayilearned
 r/space
 r/science
 r/soccer



Discussion
 Hobbies
 News and Politics
 Entertainment
 Science

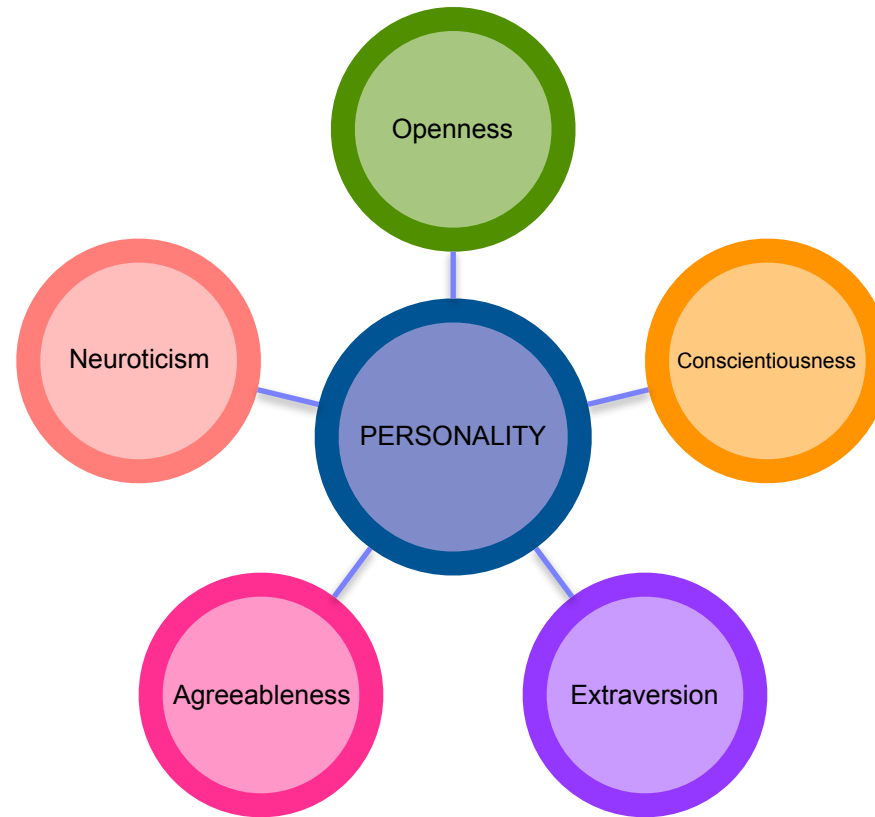


-0.6	Donald Trump
-0.2	Hillary Clinton
...	
0.6	BREXIT
0.2	Second Amendment

MEDIAN SENTIMENT
SCORE
WITHIN TOPICS

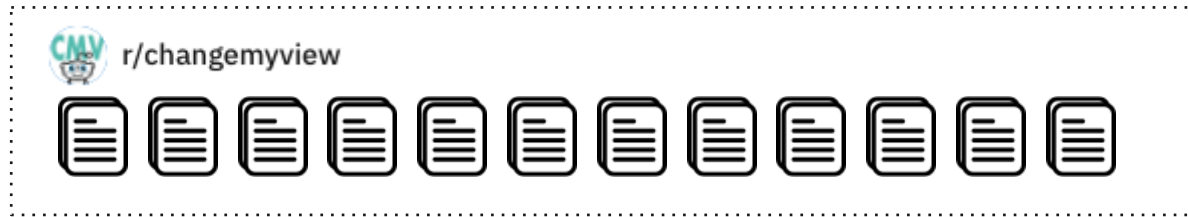
Modelling Personality Traits

Big Five



OCEAN, CANOE

Modelling Personality Traits



Modelling Personality Traits



r/changemyview



**BIG
FIVE**

neuroticism

awful,
though,
lazy,
worse,
depressing,
irony,
road,
terrible,
stressful,
horrible

extraversion

other,
drinks,
restaurant,
dancing,
cats,
grandfather,
countless,
shots,
computer,
glorious

openness

folk,
humans,
poet,
art,
universe,
narrative,
giveaway,
century,
sexual,
films

agreeableness

wonderful,
together,
visiting,
morning,
spring,
walked,
beautiful,
staying,
felt,
cost

conscientiousness

completed,
adventure,
stupid,
boring,
adventures,
desperate,
enjoying,
saying,
utter,
extreme

Label

Group of
words

Modelling Personality Traits



r/changemyview



BIG FIVE

neuroticism

awful,
though,
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saying,
utter,
extreme

Label

Group of words



12	91	...	32	0
----	----	-----	----	---

BIG FIVE

12	91	...	32	0
----	----	-----	----	---

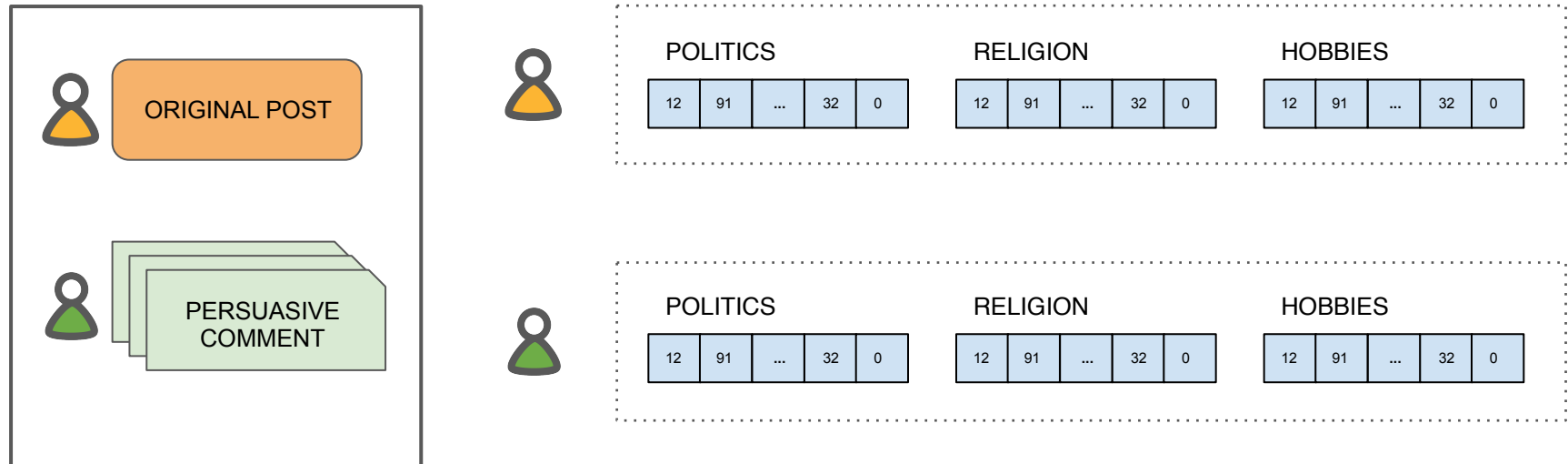
TRAITS PERCENTILES

12	91	...	32	0
----	----	-----	----	---

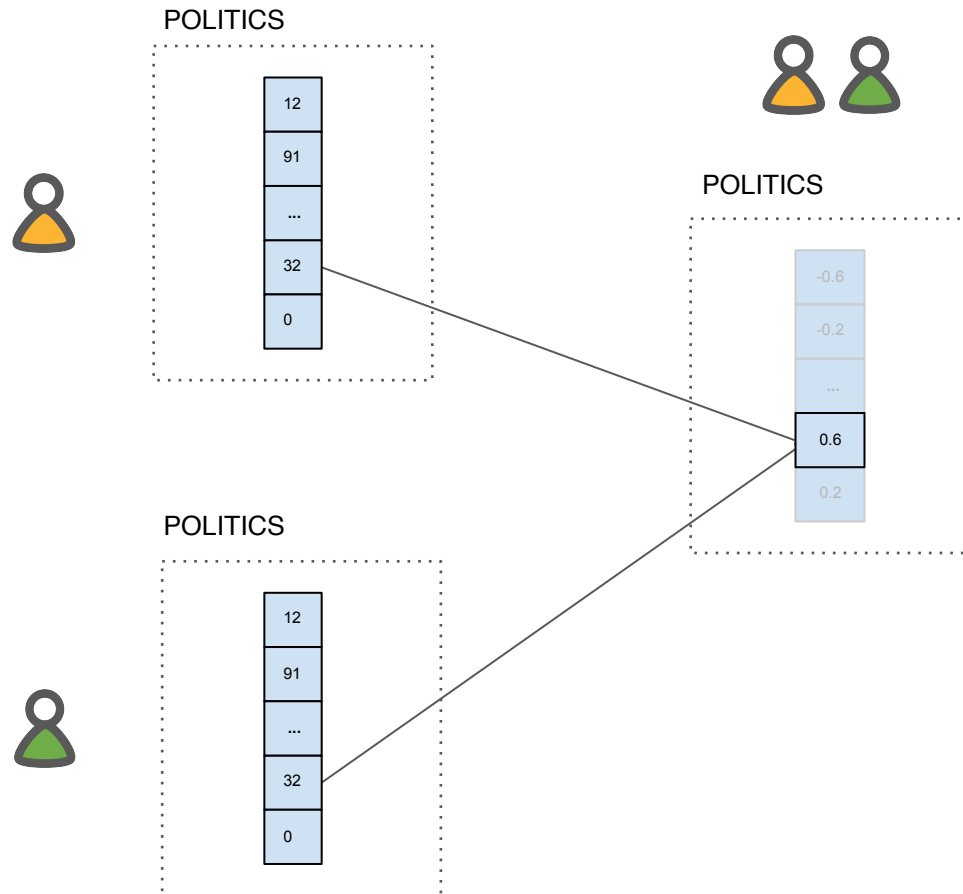
WORD CATEGORIES

Author Similarity

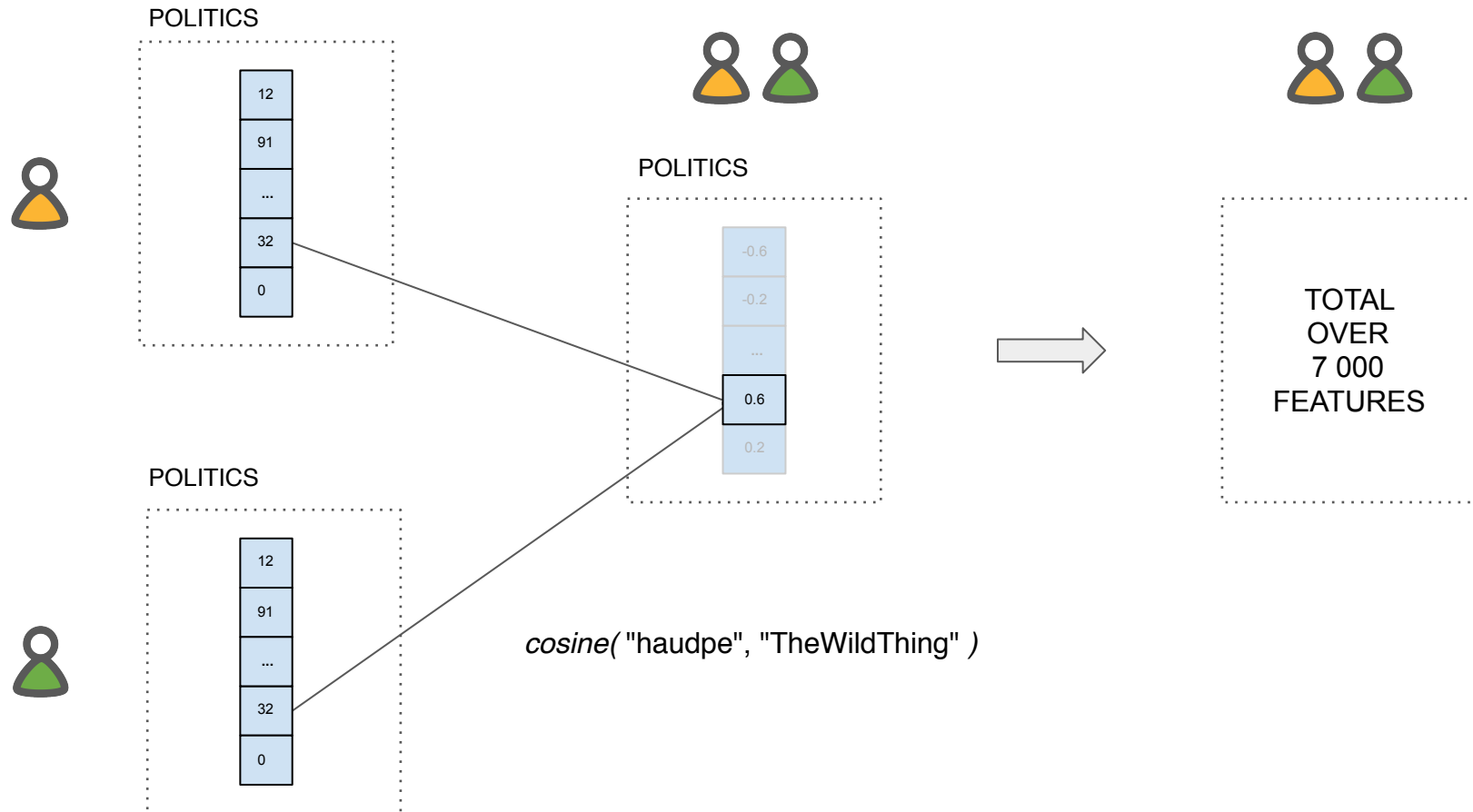
Author Similarity



Author Similarity



Author Similarity



Features overview

Feature groups:

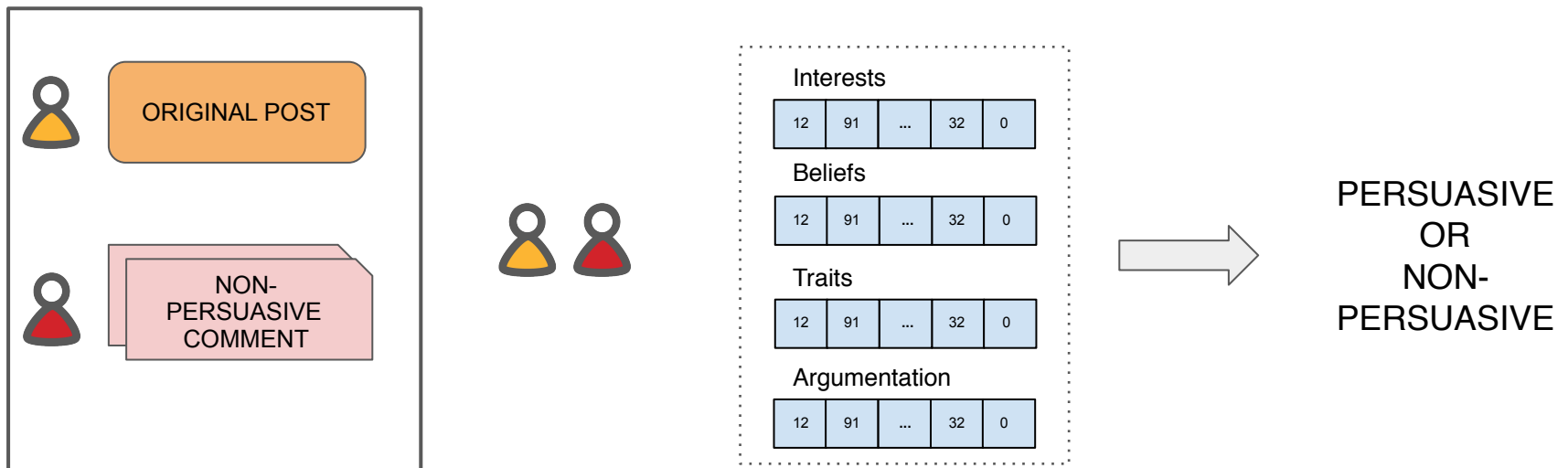
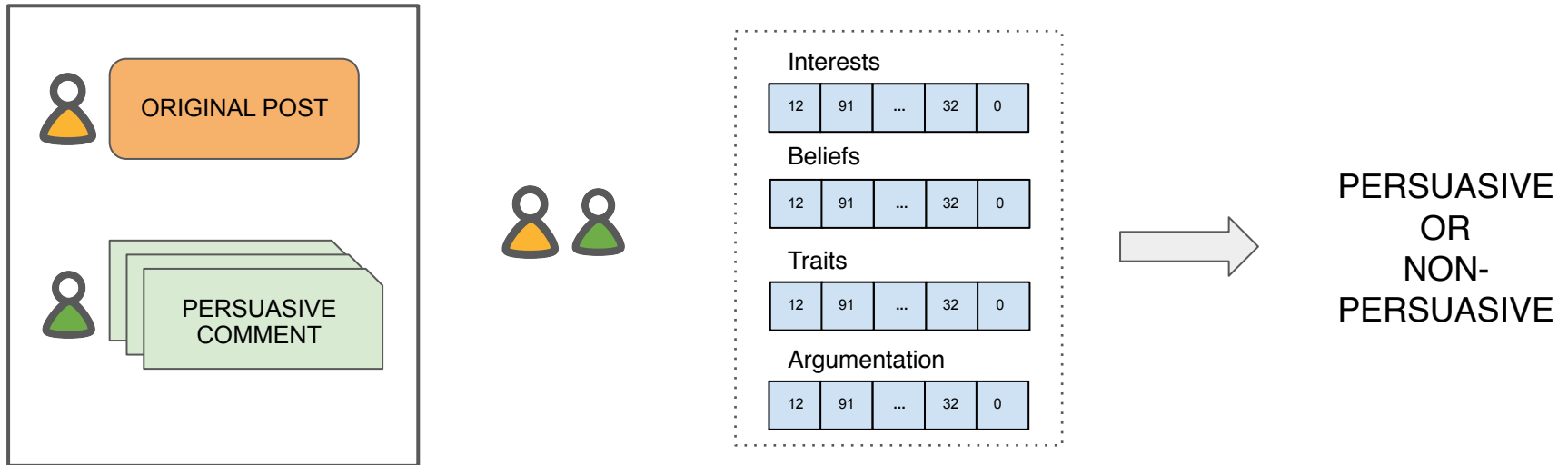
- interests
- beliefs
- personality traits
- argumentation features

- How to demonstrate the impact of the similarity of people's interests, beliefs, and personality traits on their persuasiveness, if any?

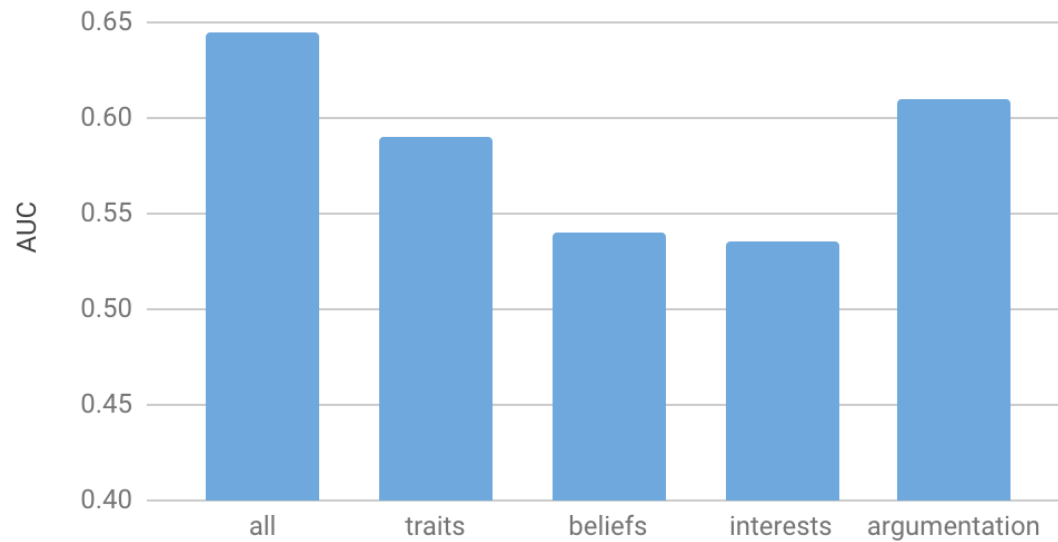
Predicting the Persuasive Argument

Opinion Malleability Prediction

Predicting the Persuasive Argument

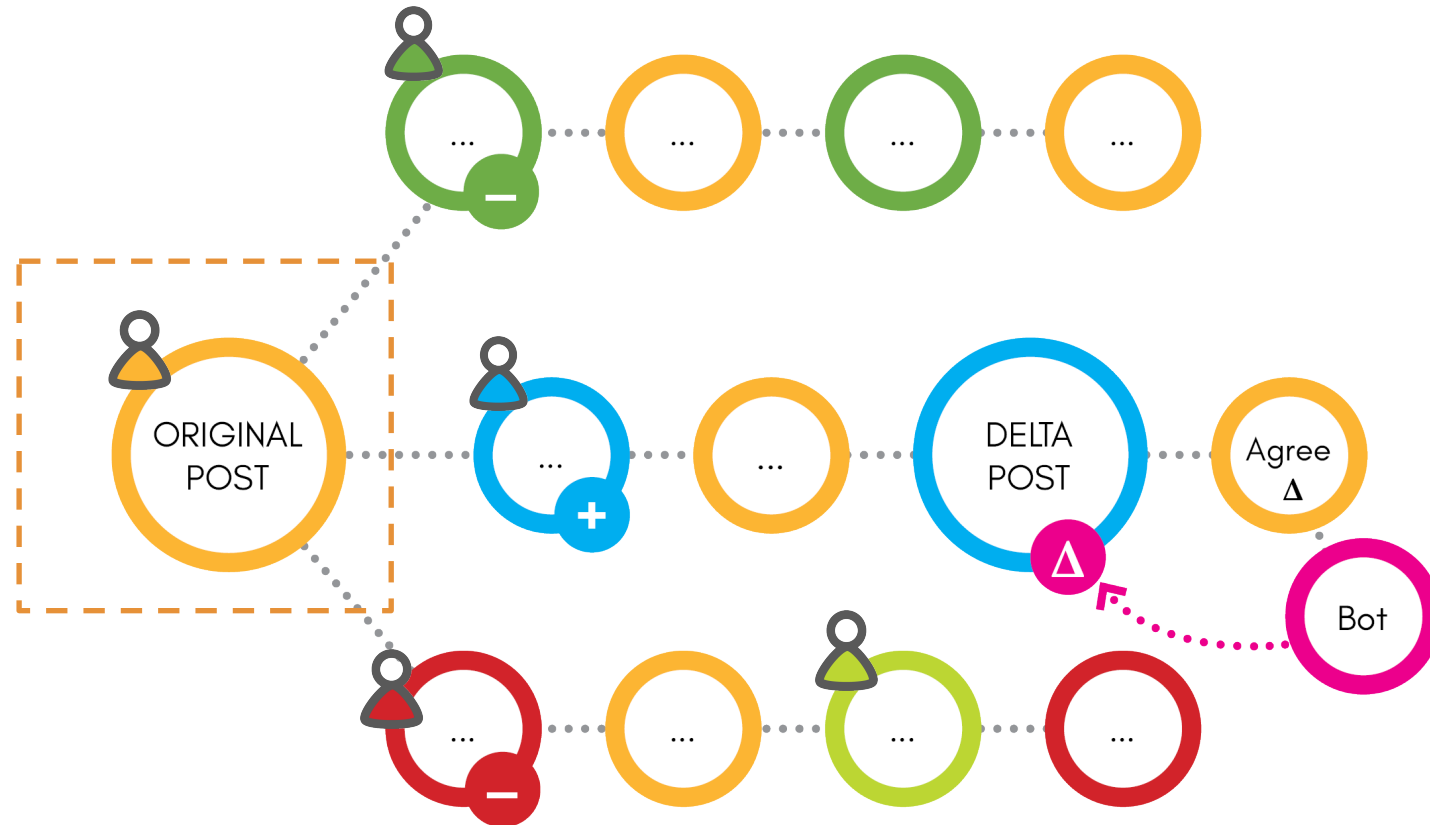


Predicting the Persuasive Argument

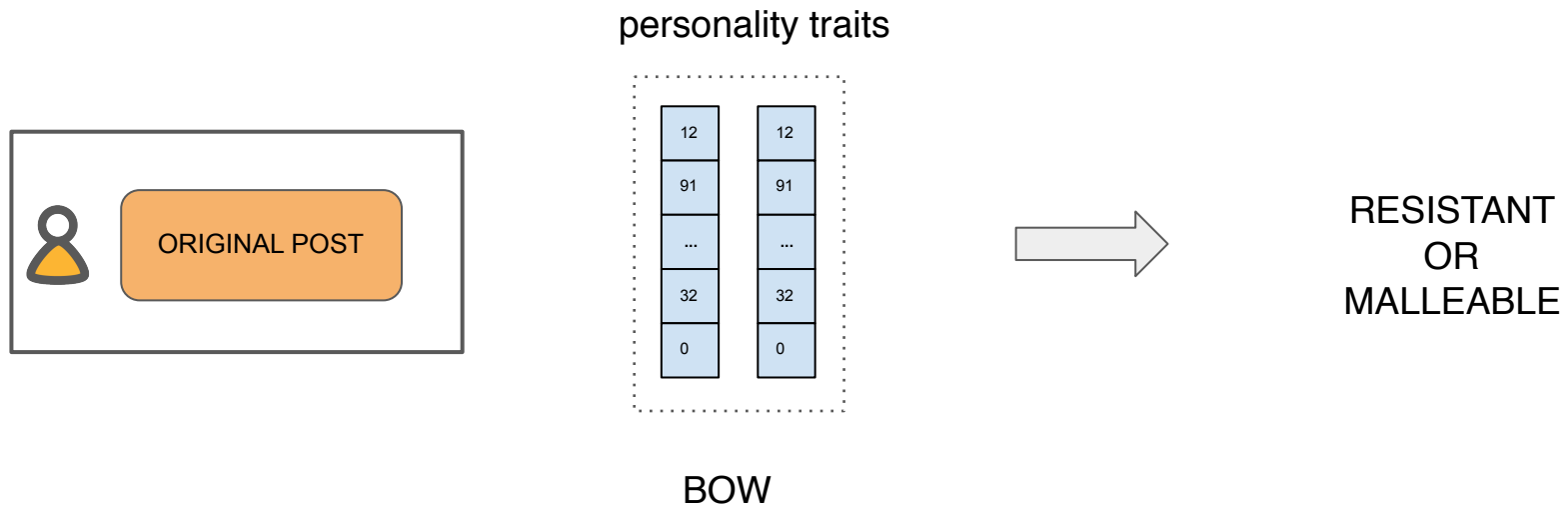


How easy is to persuade OP?

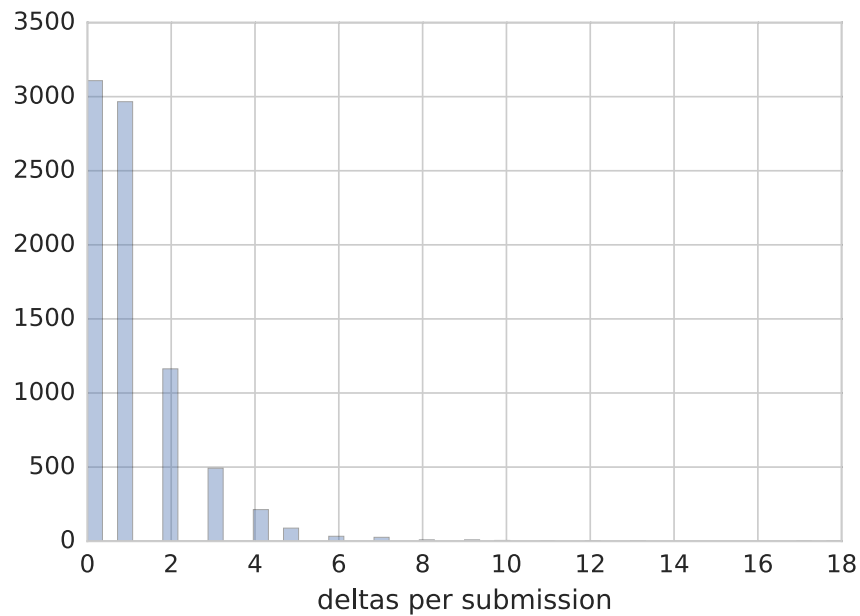
Opinion Malleability



Opinion Malleability



Opinion Malleability

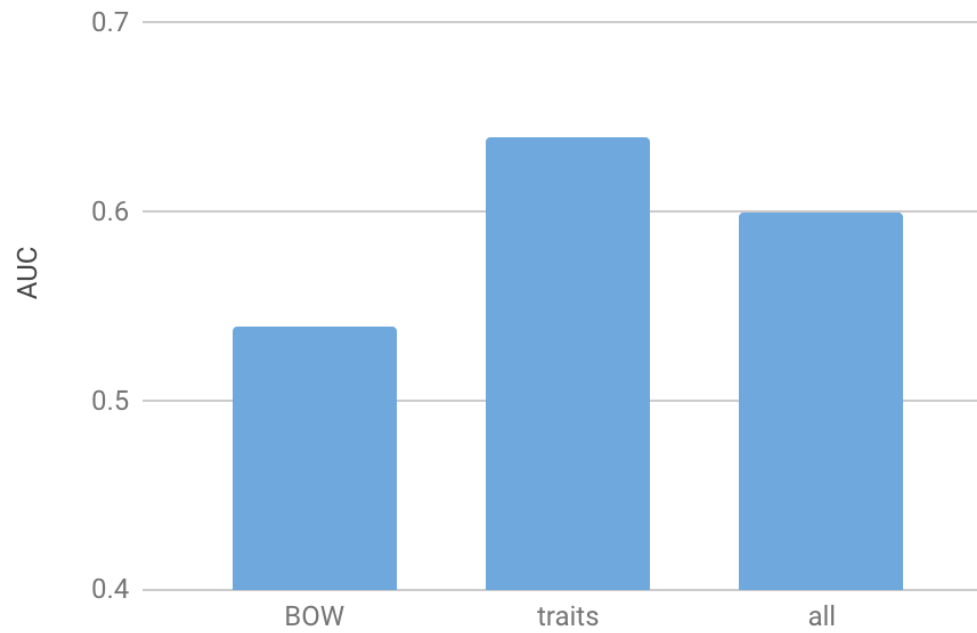


POSTS
8 121

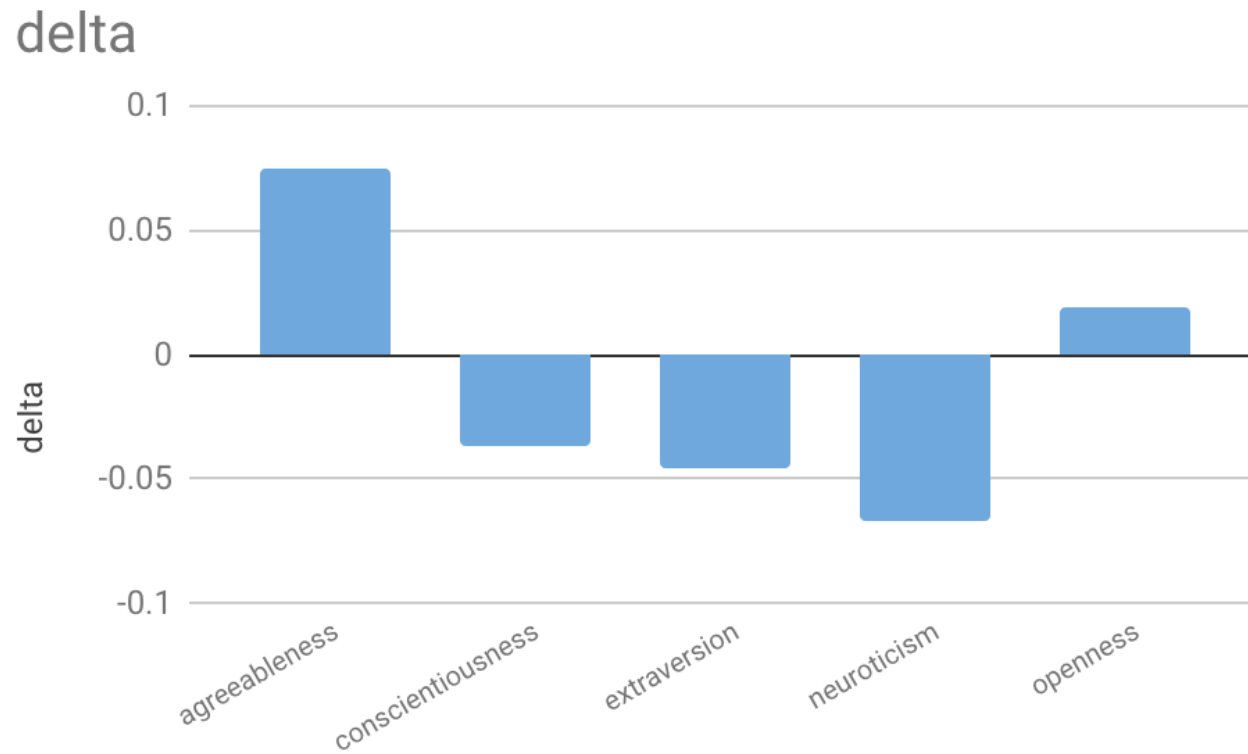
MALLEABLE
3 186

**UNIQUE
AUTHORS**
4 641

Opinion Malleability



Opinion Malleability



Future work

- structure of arguments, quality of arguments
- correlation between author traits and argumentation used
- model the experience: deltas earned
- different discussion platforms

Summary

- Research questions
 - How to represent person's interests, beliefs, and personality traits?
 - How to model the author similarity?
 - How to demonstrate the impact of the similarity of people's interests, beliefs, and personality traits on their persuasiveness, if any?
- Pairs dataset
- Author features: Interests, Beliefs, Personality Traits
- Experiments: Prediction of persuasive argument, Opinion malleability
- Explore the impact of author similarity on persuasion